# ADDENDUM NO. 5
# FIELD SAMPLING PLAN
# LEACHATE PUMPING TEST

## FOR THE

## BLACKWELL LANDFILL
## DUPAGE COUNTY, ILLINOIS

**Prepared For:**

**Forest Preserve District of DuPage County**
**DuPage County, Illinois**



Prepared by: Brian P. Griesemer — 12/22/98
Brian P. Griesemer
Project Engineer
Date

Approved by: Walter G. Buettner, P.E. — 12/22/98
Walter G. Buettner, P.E.
Project Manager
Date

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## APPENDIX

# 1.0 INTRODUCTION

A Field Sampling Plan (FSP) was submitted in August 1996 as part of the Pre-Design Investigation Work Plan for the Blackwell Landfill site. The FSP presented the scope of work, organization, objectives, functional activities, and specific operating procedures associated with planned site investigation activities.

The following four addenda to the FSP have been submitted since August 1996:

- Addendum No. 1 (November 1997) supplemented the August 1996 FSP and provided standard operating procedures for sampling required during the North Stormwater Pipe Investigation and the Surface Water Sampling of Sand Pond at the site.

- Addendum No. 2 (November 1997) provided additional standard operating procedures for sampling during Operation and Maintenance (O&M) of the leachate collection system and gas venting system. Specifically, this addendum provided procedures for sampling leachate in the leachate holding tank, and sampling landfill gas from gas vents at the site.

- Addendum No. 3 (May 1998) addressed the objectives, equipment, and sampling protocols to be used during ambient air sampling along the perimeter of Mt. Hoy at the site.

- Addendum No. 4 (June 1998) provided the objectives and sampling requirements for the planned natural attenuation study at the site.

This Addendum No. 5 provides the procedures that will be undertaken to conduct the leachate pumping tests at the site.

## 2.0 BACKGROUND

The existing leachate collection system (LCS) at the Blackwell Landfill includes nine leachate extraction wells, 2 lift stations, and 28 gas vents used to monitor leachate levels. In accordance with the September 1998 Record of Decision for the Blackwell Landfill, the LCS may be augmented by up to nine additional extraction wells if it is determined that the current system is not effective in managing leachate.

The Forest Preserve District of DuPage County (FPD) has been operating the LCS and monitoring leachate levels in accordance with the May 1998 Revised Draft Operations and Maintenance (O&M) Plan. Montgomery Watson has evaluated the change in leachate levels across the landfill, and has determined that the LCS is currently lowering leachate levels within approximately one half of the landfill (Figure 1). In the rest of the landfill, the leachate levels in the gas vents showed little, if any, effect from leachate removal.

A series of leachate pumping tests will be conducted on eight existing gas vents to gather additional information on the hydraulic properties of the landfill refuse, and to aid in development on an appropriate augmentation plan for the LCS. The eight gas vents have been selected from the one half of the landfill that does not currently show an effect from leachate removal (Figure 1), and consist of the following vents:

| | |
|---|---|
| SV-1 | DV-4 |
| SV-9 | DV-7 |
| SV-12 | DV-8 |
| | DV-13 |
| | DV-14 |

# 3.0 SCOPE OF WORK

## 3.1 LEACHATE PUMPING TEST

### Objective

The objective of the leachate pumping test is to collect sufficient site data with which to evaluate whether the existing leachate collection system will require augmentation, and to select landfill areas for adding new leachate extraction wells.

### Equipment

- Health and Safety Plan;
- Statement of Work/Sampling Plan;
- Latex or nitrile gloves;
- Leachate level indicator;
- Generator;
- Potable water;
- Submersible pump and control boxes, as appropriate;
- Polyethylene tubing;
- Flow monitoring device;
- Electrical cord;
- Field monitoring form (Appendix A);
- Tape measure;
- Decontamination equipment (DI water, Alconox, buckets, brushes, etc.); and
- Field observation sheet or field notebook.

## 3.2 INVESTIGATION ACTIVITIES

The leachate-pumping tests will be conducted in a phased approach. During the initial phase, a temporary downhole pump will be installed in a gas vent, and as much leachate as possible will be removed during a one-hour period. The leachate will be directly pumped into the LCS via the nearest leachate extraction location, or will be transferred to the LCS holding tank in some other appropriate manner, depending upon the volume of leachate removed. A field engineer will record initial data parameters prior to conducting the leachate pumping test (i.e. static liquid level, depth of gas vent, etc.).

At the start of the leachate pumping test, the static leachate within the selected landfill gas vents will be removed as quickly as possible. The volume of static leachate removed and the leachate levels during leachate removal will be documented on the field form at regular time intervals. Following removal of as much of the static leachate as possible, and depending upon the recovery rate, the pumping rate may be lowered to maintain a depressed leachate level. The volume of static leachate removed and the leachate levels during leachate removal will again be documented on the field form at regular time

intervals. If the submersible pump depletes the liquid in the gas vent, the pump can be temporarily shut off to allow leachate levels to recover prior to resuming pumping. The time that the pump is temporarily shut off, and the recovery of leachate levels during these periods shall be fully documented.

If the pumping data from the initial phase of the tests indicates that leachate from a particular gas vent may be readily extractable (i.e., relative high volumes of leachate or quick recovery of leachate levels), the pumping tests will be repeated for a longer period of time. The downhole pump will be re-installed in the gas vent, and pumping will continue for a period of eight to 24 hours. Pumping will continue for an eight hour period if the pump is operating continuously, and will continue for upwards of 24 hours if pumping is intermittent due to slow leachate recovery. During these pumping periods, the volume of leachate removed and the leachate levels would again be documented, as described above.

The investigative field work will be performed in Level D protection. Equipment used during the leachate pumping test will be rinsed between gas vents. However, following completion of the tests, the equipment will be decontaminated in accordance with the U.S EPA-approved August 1996 Field Sampling Plan, Section 7, Subsection III.

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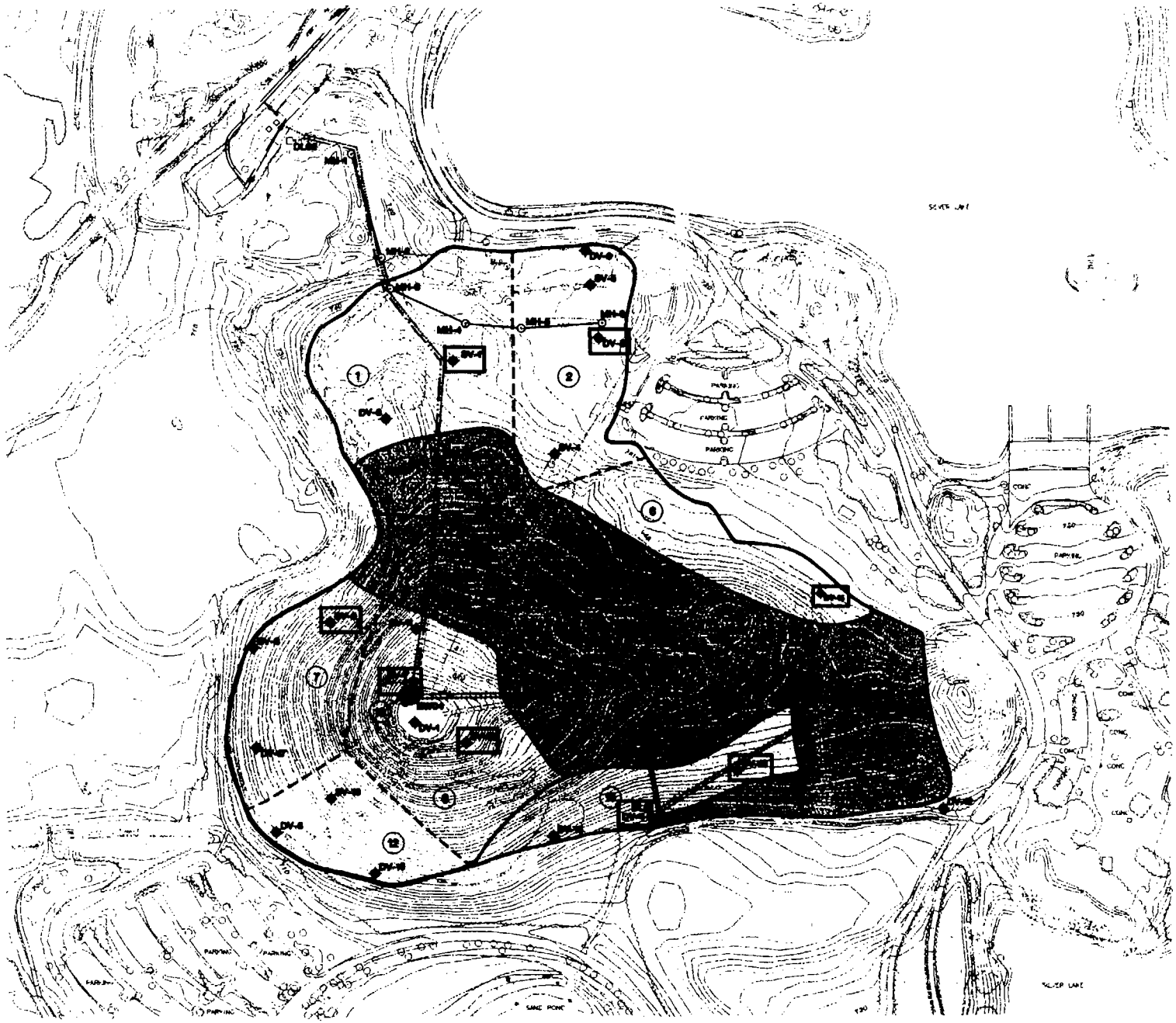

**LEGEND (EXISTING)**

- DV-6 — MONITORING WELL LOCATION AND NUMBE
  VENT PIPE LOCATION AND NUMBER
- C501 — BURNER LOCATION AND NUMBER
  SOIL BORING LOCATION AND NUMBER
- MH-6 — MANHOLE LOCATION AND NUMBER
  WITH LIQUID CUTOFF TRENCH AND PIPE
- EW01 — LEACHATE EXTRACTION WELL/GAS VENT
  LOCATION AND NUMBER
- APPROXIMATE LIMITS OF FILL
- LIMITS OF REFUSE BASED ON GEOPHYSI
  TESTING AND SOIL BORINGS

**LEGEND (PROPOSED)**

- E — BURIED ELECTRICAL SUPPLY
- LS1 — LIFT STATION LOCATION AND NUMBER
- LEACHATE PRESSURE CONVEYANCE PIPE
- LEACHATE GRAVITY CONVEYANCE PIPE
- GAS HEADER PIPE
- INFLUENCED BY GROUNDWATER LEVELS
- NO CURRENT LCS INFLUENCE
- ESTABLISHED LCS INFLUENCE
- EXISTING TREE LOCATION
- (1) CORRESPONDS TO ZONE NUMBERS
- CANDIDATE FOR PUMP TEST

**NOTES**

1. BASE MAP DEVELOPED FROM AERIAL SURVEY T
   MAP BY AERO-METRIC ENGINEERING PROJECT
   APRIL 3 AND 5, 1992.
2. CONTOUR INTERVAL IS TWO FEET. ELEVATIONS
   ON MEAN SEA LEVEL DATUM.

north

0 250 5

SCALE IN FEET

QUALITY CONTROL
Graphic Standards
Lead Professional
Technical Review
Project Manager
Management Review
Other